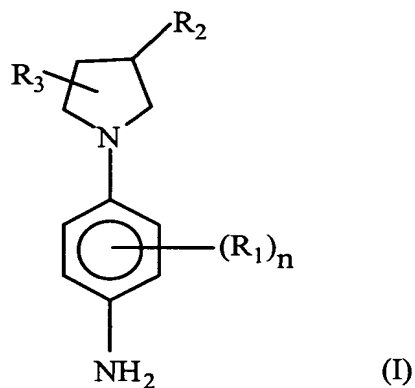


CLAIMS

1. Dyeing composition for dyeing keratinous fibres, in particular human keratinous fibres such as hair, comprising, in an appropriate dyeing medium, at least one cationic tertiary para-phenylenediamine containing a pyrrolidine ring, and at least one pearlescent or opacyifying agent chosen from coated or uncoated titanium oxides, from mica-titaniums and from micas.

2. Composition according to Claim 1, in which the cationic tertiary para-phenylenediamine corresponds to formula I:



in which

- n varies from 0 to 4, it being understood that when n is greater than or equal to 2, then the radicals R_1 may be identical or different,

- R_1 represents a halogen atom; a saturated or unsaturated, aliphatic or alicyclic, C_1 - C_6 hydrocarbon chain, it being possible for the chain to contain one or more oxygen, nitrogen, silicon or sulphur atoms or an SO_2 group, and it being possible for the chain to be substituted with one or more hydroxyl or amino radicals; an onium radical Z , the radical R_1 not containing a peroxide bond, or diazo, nitro or nitroso radicals,

- R_2 represents an onium radical Z or a radical $-X-C=NR_8-NR_9R_{10}$ in which X represents an oxygen atom or a radical $-NR_{11}$ and R_8 , R_9 , R_{10} and R_{11} represent a hydrogen atom, a C_1 - C_4 alkyl radical or a C_1 - C_4 hydroxyalkyl radical,

- R_3 represents a hydrogen atom or a hydroxyl radical.

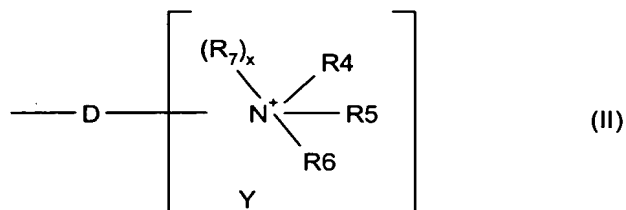
3. Composition according to Claim 2, in which the cationic tertiary para-phenylenediamine is such that n is equal to 0.

5 4. Composition according to Claim 2, in which the cationic tertiary para-phenylenediamine is such that n is equal to 1 and R_1 is chosen from the group consisting of a halogen atom; a saturated or unsaturated, aliphatic or alicyclic, C_1 - C_6 hydrocarbon chain; it being possible for one or more carbon atoms to be replaced by an oxygen, nitrogen, silicon or sulphur atom, or by an SO_2 group, the radical R_1
10 not containing a peroxide bond, or diazo, nitro or nitroso radicals.

5. Composition according to one of Claims 2 to 4, in which the cationic tertiary para-phenylenediamine is such that R_1 is chosen from chlorine, bromine, C_1 - C_4 alkyl, C_1 - C_4 hydroxyalkyl, C_1 - C_4 aminoalkyl, C_1 - C_4 alkoxy or C_1 - C_4 hydroxyalkoxy radicals.

15 6. Composition according to Claim 5, in which the cationic tertiary para-phenylenediamine is such that R_1 is chosen from a methyl, hydroxymethyl, 2-hydroxyethyl, 1,2-dihydroxyethyl, methoxy, isopropoxy or 2-hydroxyethoxy radical.

20 7. Composition according to one of Claims 2 to 6, in which the cationic tertiary para-phenylenediamine is such that R_2 represents the onium radical Z corresponding to formula (II)



in which

- D is a single bond of a linear or branched C_1 - C_{14} alkylene chain which may contain one or more heteroatoms chosen from oxygen, sulphur or nitrogen, and which may be substituted with one or more hydroxyl, C_1 - C_6 alkoxy or amino radicals and which may carry one or more ketone functional groups;

- R_4 , R_5 and R_6 , taken separately, represent a C_1 - C_{15} alkyl radical; a C_1 - C_6 monohydroxyalkyl radical; a C_2 - C_6 polyhydroxyalkyl

radical; a (C₁-C₆)alkoxy(C₁-C₆)alkyl radical; an aryl radical; a benzyl radical; a C₁-C₆ amidoalkyl radical; a tri(C₁-C₆)alkylsilane(C₁-C₆)alkyl radical; a C₁-C₆ aminoalkyl radical; a C₁-C₆ aminoalkyl radical in which the amine is mono- or di-substituted with a C₁-C₄ alkyl, (C₁-C₆)alkylcarbonyl, amido or (C₁-C₆)alkylsulphonyl radical; or

• R₄, R₅ and R₆ together, in pairs, form, with the nitrogen atom to which they are attached, a 4-, 5-, 6- or 7-membered saturated carbon ring which may contain one or more heteroatoms, it being possible for the cationic ring to be substituted with a halogen atom, a hydroxyl radical, a C₁-C₆ alkyl radical, a C₁-C₆ monohydroxyalkyl radical, a C₂-C₆ polyhydroxy-alkyl radical, a C₁-C₆ alkoxy radical, a tri(C₁-C₆)alkylsilane(C₁-C₆)alkyl radical, an amido radical, a carboxyl radical, a (C₁-C₆)alkylcarbonyl radical, a thio (-SH) radical, a C₁-C₆ thioalkyl (-R-SH) radical, a (C₁-C₆)alkylthio radical, an amino radical, an amino radical which is mono- or di-substituted with a (C₁-C₆)alkyl, (C₁-C₆)alkylcarbonyl, amido or (C₁-C₆)alkylsulphonyl radical;

• R₇ represents a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; an aryl radical; a benzyl radical; a C₁-C₆ aminoalkyl radical; a C₁-C₆ aminoalkyl radical whose amine is mono- or di-substituted with a (C₁-C₆)alkyl, (C₁-C₆)alkylcarbonyl, amido or (C₁-C₆)alkylsulphonyl radical; a C₁-C₆ carboxyalkyl radical; a C₁-C₆ carbamylalkyl radical; a C₁-C₆ trifluoroalkyl radical; a tri(C₁-C₆)alkylsilane(C₁-C₆)alkyl radical; a C₁-C₆ sulphonamidoalkyl radical; a (C₁-C₆)alkylcarboxy(C₁-C₆)alkyl radical; a (C₁-C₆)alkylsulphanyl(C₁-C₆)alkyl radical; a (C₁-C₆)alkylsulphonyl(C₁-C₆)alkyl radical; a (C₁-C₆)alkylcarbonyl(C₁-C₆)alkyl radical; an N-(C₁-C₆)alkylcarbamyl(C₁-C₆)alkyl radical; an N-(C₁-C₆)alkylsulphonamido(C₁-C₆)alkyl radical;

• x is 0 or 1,

- when x = 0, then the linking arm is attached to the nitrogen atom carrying the radicals R₄ to R₆;

when x = 1, then two of the radicals R₄ to R₆ form, together with the nitrogen atom to which they are attached, a 4-, 5-, 6- or 7-

membered saturated ring and D is linked to the carbon atom of the saturated ring;

Y is a counter-ion.

8. Composition according to Claim 7, in which the cationic tertiary para-phenylenediamine is such that R₂ corresponds to formula II in which x is equal to 0 and R₄, R₅ and R₆ separately are preferably chosen from a C₁-C₆ alkyl radical, a C₁-C₄ monohydroxyalkyl radical, a C₂-C₄ polyhydroxyalkyl radical, a (C₁-C₆)alkoxy(C₁-C₄)alkyl radical, a C₁-C₆ amidoalkyl radical, a tri(C₁-C₆)alkylsilane(C₁-C₆)alkyl radical, or R₄ with R₅ form together an azetidine ring, a pyrrolidine, piperidine, piperazine or morpholine ring, R₆ being chosen in this case from a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical, a C₂-C₆ polyhydroxyalkyl radical; a C₁-C₆ aminoalkyl radical, an aminoalkyl radical which is mono- or di-substituted with a (C₁-C₆)alkyl radical, a (C₁-C₆)alkylcarbonyl, amido or (C₁-C₆)alkylsulphonyl radical; a C₁-C₆ carbamylalkyl radical; a tri(C₁-C₆)alkylsilane(C₁-C₆)alkyl radical; a (C₁-C₆)alkyl carboxy(C₁-C₆)alkyl radical; a (C₁-C₆)alkylcarbonyl(C₁-C₆)alkyl radical; an N-(C₁-C₆)alkylcarbamyl(C₁-C₆)alkyl radical.

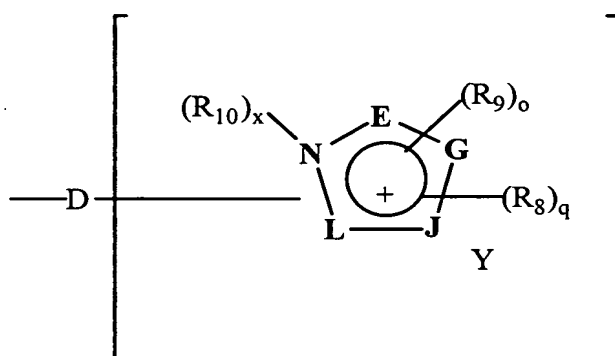
9. Composition according to Claim 7, in which the cationic tertiary para-phenylenediamine is such that R₂ corresponds to formula II in which x is equal to 1 and R₇ is chosen from a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxy-alkyl radical; a C₁-C₆ aminoalkyl radical, a C₁-C₆ aminoalkyl radical whose amine is mono- or di-substituted with a (C₁-C₆)alkyl, (C₁-C₆)alkylcarbonyl, amido or a (C₁-C₆)alkylsulphonyl radical; a C₁-C₆ carbamylalkyl radical, a tri(C₁-C₆)alkylsilane(C₁-C₆)alkyl radical; a (C₁-C₆)alkylcarboxy(C₁-C₆)alkyl radical; a (C₁-C₆)alkylcarbonyl(C₁-C₆)alkyl radical; an N-(C₁-C₆)alkylcarbamyl(C₁-C₆)alkyl radical; R₄ with R₅ together form an azetidine, pyrrolidine, piperidine, piperazine or morpholine ring, R₆ being chosen in this case from a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyl alkyl radical; a C₁-C₆ aminoalkyl radical; a C₁-C₆ aminoalkyl radical whose amine is mono- or di-substituted with a (C₁-C₆)alkyl, (C₁-C₆)alkylcarbonyl, amido or (C₁-C₆)alkylsulphonyl radical; a C₁-C₆

carbamylalkyl radical; a tri(C₁-C₆)alkylsilane(C₁-C₆)alkyl radical; a (C₁-C₆)alkylcarboxy(C₁-C₆)alkyl radical; a (C₁-C₆)alkylcarbonyl(C₁-C₆)alkyl radical; an N-(C₁-C₆)alkylcarbamyl(C₁-C₆)alkyl radical.

10. Composition according one of Claims 7 to 9, in which the cationic tertiary para-phenylenediamine is such that D is a single bond or an alkylene chain which may be substituted.

11. Composition according to one of Claims 7 to 10, in which the cationic tertiary para-phenylenediamine is such that R₂ is a trialkylammonium radical.

12. Composition according to one of Claims 2 to 6, in which the cationic tertiary para-phenylenediamine is such that R₂ represents the onium radical Z corresponding to formula III



(III)

in which

- D is a single bond or a linear or branched C₁-C₁₄ alkylene chain which may contain one or more heteroatoms chosen from oxygen, sulphur or nitrogen, and which may be substituted with one or more hydroxyl, C₁-C₆ alkoxy or amino radicals, and which may carry one or more ketone functional groups;

- the vertices E, G, J, L, which are identical or different, represent a carbon, oxygen, sulphur or nitrogen atom to form a

pyrrole, pyrazole, imidazole, triazole, oxazole, isooxazole, thiazole, isothiazole ring,

- q is an integer between 0 and 4 inclusive;
- is an integer between 0 and 3 inclusive;
- 5 • q+o is an integer between 0 and 4;
- the radicals R₈, which are identical or different, represent a halogen atom, a hydroxyl radical, a C₁-C₆ alkyl radical, a C₁-C₆ monohydroxyalkyl radical, a C₂-C₆ polyhydroxyalkyl radical, a C₁-C₆ alkoxy radical, a tri(C₁-C₆)alkylsilane(C₁-C₆)alkyl radical, an amido radical, a carboxyl radical, a C₁-C₆ alkylcarbonyl radical, a thio radical, a C₁-C₆ thioalkyl radical, a (C₁-C₆)alkylthio radical, an amino radical, an amino radical which is mono- or di-substituted with a (C₁-C₆)alkyl, (C₁-C₆)alkylcarbonyl, amido or (C₁-C₆)alkylsulphonyl radical; a C₁-C₆ monohydroxyalkyl radical or a C₂-C₆ polyhydroxyalkyl radical; it being understood that the radicals R₈ are carried by a carbon atom,
- the radicals R₉, which are identical or different, represent a C₁-C₆ alkyl radical, a C₁-C₆ monohydroxyalkyl radical, a C₂-C₆ polyhydroxyalkyl radical, a tri(C₁-C₆)alkylsilane(C₁-C₆)alkyl radical, a (C₁-C₆)alkoxy(C₁-C₆)alkyl radical, a C₁-C₆ carbamylalkyl radical, a (C₁-C₆)alkylcarboxy(C₁-C₆)alkyl radical, a benzyl radical; it being understood that the radicals R₉ are carried by a nitrogen,
- R₁₀ represents a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; an aryl radical; a benzyl radical; a C₁-C₆ aminoalkyl radical, a C₁-C₆ aminoalkyl radical whose amine is substituted with a (C₁-C₆)alkyl, (C₁-C₆)alkylcarbonyl, amido or (C₁-C₆)alkylsulphonyl radical; a C₁-C₆ carboxyalkyl radical; a C₁-C₆ carbamylalkyl radical; a C₁-C₆ trifluoroalkyl radical; a tri(C₁-C₆)alkylsilane(C₁-C₆)alkyl radical; a C₁-C₆ sulphonamidoalkyl radical; a (C₁-C₆)alkylcarboxy(C₁-C₆)alkyl radical; a (C₁-C₆)alkylsulphonyl(C₁-C₆)alkyl radical; a (C₁-C₆)alkylsulphonyl(C₁-C₆)alkyl radical; a (C₁-C₆)alkylcarbonyl(C₁-C₆)alkyl radical; an N-(C₁-C₆)alkylcarbamyl(C₁-C₆)alkyl radical; an N-(C₁-C₆)alkylsulphonamido(C₁-C₆)alkyl radical;

- x is 0 or 1
- when x = 0, the linking arm D is attached to the nitrogen atom,
- when x = 1, the linking arm D is attached to one of the vertices E, G, J or L,

5

- Y is a counter-ion.

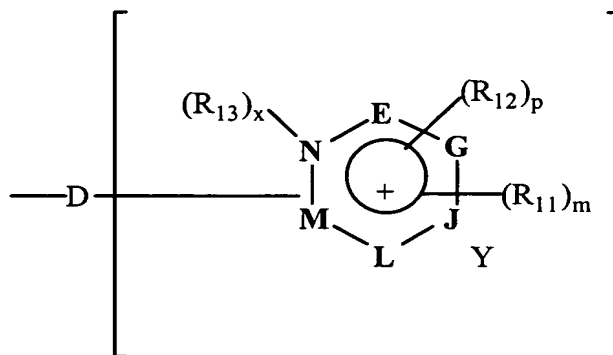
13. Composition according to Claim 12, in which the cationic tertiary para-phenylenediamine is such that the vertices E, G, J and L form an imidazole ring.

10

14. Composition according to Claim 12 or 13, in which the cationic tertiary para-phenylenediamine is such that x is equal to 0, D is a single bond or an alkylene chain which may be substituted.

15. Composition according to one of Claims 2 to 6, in which the cationic tertiary para-phenylenediamine is such that R₂ represents an onium radical Z corresponding to formula IV

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(IV)

in which:

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- D is a single bond or a linear or branched C₁-C₁₄ alkylene chain which may contain one or more heteroatoms chosen from an oxygen, sulphur or nitrogen atom, and which may be substituted with one or more hydroxyl, C₁-C₆ alkoxy or amino radicals, and which may carry one or more ketone functional groups;

25

- the vertices E, G, J, L and M, which are identical or different, represent a carbon, oxygen, sulphur or nitrogen atom to form a ring

chosen from the pyridine, pyrimidine, pyrazine, triazine and pyridazine rings;

- p is an integer between 0 and 3 inclusive;
- m is an integer between 0 and 5 inclusive;
- 5 • p+m is an integer between 0 and 5;
- the radicals R_{11} , which are identical or different, represent a halogen atom, a hydroxyl radical, a C_1-C_6 alkyl radical, a C_1-C_6 monohydroxyalkyl radical, a C_2-C_6 polyhydroxyalkyl radical, a C_1-C_6 alkoxy radical, a tri(C_1-C_6)alkylsilane(C_1-C_6)alkyl radical, an amido radical, a carboxyl radical, a C_1-C_6 alkylcarbonyl radical, a thio radical, a C_1-C_6 thioalkyl radical, a (C_1-C_6)alkylthio radical, an amino radical, an amino radical which is substituted with a (C_1-C_6)alkyl, (C_1-C_6)alkylcarbonyl, amido or (C_1-C_6)alkylsulphonyl radical; a C_1-C_6 monohydroxyalkyl radical or a C_2-C_6 polyhydroxyalkyl radical; it
10 being understood that the radicals R_{11} are carried by a carbon atom,
- the radicals R_{12} , which are identical or different, represent a C_1-C_6 alkyl radical, a C_1-C_6 monohydroxyalkyl radical, a C_2-C_6 polyhydroxyalkyl radical, a tri(C_1-C_6)alkylsilane(C_1-C_6)alkyl radical, a (C_1-C_6)alkoxy(C_1-C_6)alkyl radical, a C_1-C_6 carbamylalkyl radical, a
15 (C_1-C_6)alkylcarboxy(C_1-C_6)alkyl radical, a benzyl radical; it being understood that the radicals R_{12} are carried by a nitrogen,
- R_{13} represents a C_1-C_6 alkyl radical; a C_1-C_6 monohydroxyalkyl radical; a C_2-C_6 polyhydroxyalkyl radical; an aryl radical; a benzyl radical; a C_1-C_6 aminoalkyl radical, a C_1-C_6 aminoalkyl radical whose
20 amine is mono- or di-substituted with a (C_1-C_6)alkyl, (C_1-C_6)alkylcarbonyl, amido or (C_1-C_6)alkylsulphonyl radical; a C_1-C_6 carboxyalkyl radical; a C_1-C_6 carbamylalkyl radical; a C_1-C_6 trifluoroalkyl radical; a tri(C_1-C_6)alkylsilane(C_1-C_6)alkyl radical; a
25 C_1-C_6 sulphonamidoalkyl radical; a (C_1-C_6)alkylcarboxy(C_1-C_6)alkyl radical; a (C_1-C_6)alkylsulphonyl(C_1-C_6)alkyl radical; a (C_1-C_6)alkylsulphonyl(C_1-C_6)alkyl radical; a (C_1-C_6)alkylcarbonyl(C_1-C_6)alkyl radical; an N-(C_1-C_6)alkylcarbamyl(C_1-C_6)alkyl radical; an
30 N-(C_1-C_6)alkylsulphonamido(C_1-C_6)alkyl radical;
- x is 0 or 1

- when $x = 0$, the linking arm D is attached to the nitrogen atom,
- when $x = 1$, the linking arm D is attached to one of the vertices E, G, J, L or M,
- Y is a counter-ion.

5 16. Composition according to Claim 15, in which the vertices E, G, J, L and M form, with the nitrogen of the ring, a ring chosen from pyridine and pyrimidine rings.

10 17. Composition according to either of Claims 15 and 16, in which the cationic tertiary para-phenylenediamine is such that x is equal to 0 and R_{11} is chosen from a hydroxyl radical, a C_1 - C_6 alkyl radical, a C_1 - C_6 monohydroxyalkyl radical, a C_2 - C_6 polyhydroxyalkyl radical, a C_1 - C_6 alkoxy radical, a tri(C_1 - C_6)alkylsilane(C_1 - C_6)alkyl radical, an amido radical, a C_1 - C_6 alkylcarbonyl radical, an amino radical, an amino radical which is mono- or di-substituted with a (C_1 - C_6)alkyl, a (C_1 - C_6)alkylcarbonyl, amido or (C_1 - C_6)alkylsulphonyl radical;
15 a C_1 - C_6 monohydroxyalkyl radical or a C_2 - C_6 polyhydroxyalkyl radical and R_{12} is chosen from a C_1 - C_6 alkyl radical, a C_1 - C_6 monohydroxyalkyl radical, a C_2 - C_6 polyhydroxyalkyl radical, a tri(C_1 - C_6)alkylsilane(C_1 - C_6)alkyl radical, a (C_1 - C_6)alkoxy(C_1 - C_6)alkyl radical, a C_1 - C_6 carbamylalkyl radical.
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18. Composition according to either of Claims 15 and 16, in which the cationic tertiary para-phenylenediamine is such that x is equal to 1 and R_{13} is chosen from a C_1 - C_6 alkyl radical; a C_1 - C_6 monohydroxyalkyl radical; a C_2 - C_6 polyhydroxyalkyl radical; a C_1 - C_6 aminoalkyl radical, a C_1 - C_6 aminoalkyl radical whose amine is mono- or di-substituted with a (C_1 - C_6)alkyl radical, a (C_1 - C_6)alkylcarbonyl radical, an amido radical, a (C_1 - C_6)alkylsulphonyl radical; a C_1 - C_6 carbamylalkyl radical; a tri(C_1 - C_6)alkylsilane(C_1 - C_6)alkyl radical; a (C_1 - C_6)alkylcarbonyl(C_1 - C_6)alkyl radical; an N-(C_1 - C_6)alkylcarbonyl(C_1 - C_6)alkyl radical; R_{11} is chosen from a hydroxyl radical, a C_1 - C_6 alkyl radical, a C_1 - C_6 monohydroxyalkyl radical, a C_2 - C_6 polyhydroxyalkyl radical, a C_1 - C_6 alkoxy radical, a tri(C_1 - C_6)alkylsilane(C_1 - C_6)alkyl radical, an amido radical, a C_1 - C_6 alkylcarbonyl radical, an amino radical, an amino radical which is
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mono- or di- substituted with a (C₁-C₆)alkyl, (C₁-C₆)alkylcarbonyl, amido or (C₁-C₆)alkylsulphonyl radical; and R₁₂ is chosen from a C₁-C₆ alkyl radical, a C₁-C₆ monohydroxyalkyl radical, a C₂-C₆ polyhydroxyalkyl radical, a tri(C₁-C₆)alkylsilane(C₁-C₆)alkyl radical, a (C₁-C₆)alkoxy(C₁-C₆)alkyl radical, a C₁-C₆ carbamylalkyl radical.

19. Composition according to any one of Claims 15 to 18, in which the cationic tertiary para-phenylenediamine is such that R₁₁, R₁₂ and R₁₃ are alkyl radicals which may be substituted.

20. Composition according to one of Claims 2 to 6, in which the cationic tertiary para-phenylenediamine is such that the radical R₂ is the radical of formula -XP(O)(O-)OCH₂CH₂N⁺(CH₃)₃ where X represents an oxygen atom or a radical -NR₁₄, R₁₄ representing a hydrogen, a C₁-C₄ alkyl radical or a hydroxyalkyl radical.

21. Composition according to one of Claims 2 to 6, in which the cationic tertiary para-phenylenediamine is such that R₂ is a guanidine radical of formula -X-C=NR₈-NR₉R₁₀, X represents an oxygen atom or a radical -NR₁₁, R₈, R₉, R₁₀ and R₁₁ representing a hydrogen, a C₁-C₄ alkyl radical or a hydroxyalkyl radical.

22. Composition according to any one of the preceding claims, in which the cationic tertiary para-phenylene is chosen from the group consisting of

[1-(4-Aminophenyl)pyrrolidin-3-yl]trimethylammonium chloride,

[1-(4-Aminophenyl)pyrrolidin-3-yl]dimethyltetradecylammonium bromide

N'-[1-(4-Aminophenyl)pyrrolidin-3-yl]-N,N-dimethylguanidinium chloride

N-[1-(4-Aminophenyl)pyrrolidin-3-yl]guanidinium chloride

3-[1-(4-Aminophenyl)pyrrolidin-3-yl]-1-methyl-3H-imidazol-1-ium chloride

[1-(4-Aminophenyl)pyrrolidin-3-yl]-(2-hydroxyethyl)dimethylammonium chloride

- [1-(4-Aminophenyl)pyrrolidin-3-yl]dimethyl-(3-trimethylsilanylpropyl)ammonium chloride
- [1-(4-Aminophenyl)pyrrolidin-3-yl]-(trimethylammonium-hexyl)dimethylammonium dichloride
- 5 [1-(4-Aminophenyl)pyrrolidin-3-yl]oxophosphorylcholine
 {2-[1-(4-Aminophenyl)pyrrolidin-3-yloxy]ethyl} trimethylammonium chloride
- 1 {2-[1-(4-Aminophenyl)pyrrolidin-3-yloxy]ethyl}-1-methylpyrrolidinium chloride
- 10 3-{3-[1-(4-Aminophenyl)pyrrolidin-3-yloxy]propyl}-1-methyl-3H-imidazol-1-ium chloride
- 1 {2-[1-(4-Aminophenyl)pyrrolidin-3-yloxy]ethyl}-1-methylpiperidinium chloride
- 15 3-{3-[1-(5-trimethylsilanylethyl-4-Amino-3-trimethylsilanylethylphenyl)pyrrolidin-3-yloxy]propyl}-1-methyl-3H-imidazol-1-um chloride
- [1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]trimethylammonium chloride
- [1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]dimethyl-tetradecylammonium chloride
- 20 N'-[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]-N,N-dimethylguanidinium chloride
- N-[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]guanidinium chloride
- 25 3-[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]-1-methyl-3H-imidazol-1-ium chloride
- [1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]-(2-hydroxyethyl)dimethylammonium chloride
- [1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]dimethyl-(3-trimethylsilanylpropyl)ammonium chloride
- 30 [1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]-(trimethylammoniumhexyl-dimethylammonium dichloride
- [1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]oxophosphorylcholine

- {2-[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yloxy]ethyl}trimethylammonium chloride
- 1-{2-[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yloxy]ethyl}-1-methylpyrrolidinium chloride
- 5 3-{3-[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yloxy]-propyl}1-methyl-3H-imidazol-1-ium chloride
- 1-{2-[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yloxy]ethyl}-1-methylpiperidinium chloride
- [1-(4-Amino-3-trimethylsilanylethylphenyl)pyrrolidin-3-yl]trimethylammonium chloride
- 10 3-[1-(4-Amino-3-trimethylsilanylethylphenyl)pyrrolidin-3-yl]-1-methyl-3H-imidazol-1-ium chloride
- 3-{3-[1-(4-Amino-3-trimethylsilanylethylphenyl)pyrrolidin-3-yloxy]propyl}-1-methyl-3H-imidazol-1-ium chloride
- 15 [1-(5-trimethylsilanylethyl-4-Amino-3-trimethylsilanylethylphenyl)pyrrolidin-3-yl]trimethylammonium chloride
- 3-[1-(5-trimethylsilanylethyl-4-Amino-3-trimethylsilanylethylphenyl)pyrrolidin-3-yl]-1-methyl-3H-imidazol-1-ium chloride
- 1'-(4-Aminophenyl)-1-methyl-[1,3']bipyrrolidinyl-1-ium chloride
- 20 1'-(4-Amino-3-methylphenyl)-1-methyl-[1,3']bipyrrolidinyl-1-ium chloride
- 3-{[1-(4-Aminophenyl)pyrrolidin-3-ylcarbamoyl]methyl}-1-methyl-3H-imidazol-1-ium chloride
- 25 3-{[1-(4-Amino-3-methylphenyl)pyrrolidin-3-ylcarbamoyl]-methyl}-1-methyl-3H-imidazol-1-ium chloride
- 3-[1-(4-Aminophenyl)pyrrolidin-3-yl]-1-(3-trimethylsilylpropyl)-3H-imidazol-1-ium chloride
- 3-[1-(4-Aminophenyl)pyrrolidin-3-yl]-1-(3-trimethylsilylpropyl)-3H-imidazol-1-ium chloride
- 30 [1-(4-aminophenyl)pyrrolidin-3-yl]ethyldimethylammonium chloride
- [1-(4-aminophenyl)pyrrolidin-3-yl]ethyldimethylammonium iodide

[1-(4-aminophenyl)pyrrolidin-3-yl]propyldimethylammonium
iodide,

[1-(4-aminophenyl)pyrrolidin-3-yl]propyldimethylammonium
bromide

5 [1-(4-aminophenyl)pyrrolidin-3-yl]propyldimethylammonium
methosulphate

[1-(4-aminophenyl)pyrrolidin-3-yl]butyldimethylammonium
iodide

10 [1-(4-aminophenyl)pyrrolidin-3-yl]pentyldimethylammonium
iodide

[1-(4-aminophenyl)pyrrolidin-3-yl]hexyldimethylammonium
iodide

[1-(4-aminophenyl)pyrrolidin-3-yl]heptyldimethylammonium
iodide

15 [1-(4-Aminophenyl)pyrrolidin-3-yl]octyldimethylammonium
iodide

[1-(4-aminophenyl)pyrrolidin-3-yl]decyldimethylammonium
iodide

20 [1-(4-aminophenyl)pyrrolidin-3-yl]hexadecyldimethyl-
ammonium iodide

[1-(4-aminophenyl)pyrrolidin-3-yl]hydroxyethyldimethyl-
ammonium chloride

[1-(4-aminophenyl)pyrrolidin-3-yl]hydroxyethyldimethyl-
ammonium iodide.

25 23. Composition according to one of the preceding claims,
in which the cationic tertiary para-phenylene is chosen from the group
consisting of [1-(4-Aminophenyl)pyrrolidin-3-yl]trimethylammonium
chloride;

30 [1-(4-Aminophenyl)pyrrolidin-3-yl]dimethyltetradecyl-
ammonium bromide;

N'-[1-(4-Aminophenyl)pyrrolidin-3-yl]-N,N-
dimethylguanidinium chloride

N-[1-(4-Aminophenyl)pyrrolidin-3-yl]guanidinium chloride

- 3-[1-(4-Aminophenyl)pyrrolidin-3-yl]-1-methyl-3H-imidazol-1-ium chloride;
- [1-(4-Aminophenyl)pyrrolidin-3-yl](2-hydroxyethyl)dimethylammonium chloride
- 5 [1-(4-Aminophenyl)pyrrolidin-3-yl]dimethyl-(3-trimethylsilanylpropyl)ammonium chloride;
- [1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]trimethylammonium chloride
- [1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]dimethyl-
- 10 tetradecylammonium chloride
- N'-[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]-N,N-dimethylguanidinium chloride
- N-[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]guanidinium chloride
- 15 3-[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]-1-methyl-3H-imidazol-1-ium chloride
- [1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]-(2-hydroxyethyl)dimethylammonium chloride
- [1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]dimethyl-(3-
- 20 trimethylsilanylpropyl)ammonium chloride
- 1'-(4-Aminophenyl)-1-methyl-[1,3']bipyrrolidinyl-1-ium chloride
- 1'-(4-Amino-3-methylphenyl)-1-methyl-[1,3']bipyrrolidinyl-1-ium chloride
- 25 3-{[1-(4-Aminophenyl)pyrrolidin-3-yl]carbamoyl}methyl}-1-methyl-3H-imidazol-1-ium chloride
- 3-{[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]carbamoyl}methyl}-1-methyl-3H-imidazol-1-ium chloride
- 3-[1-(4-Aminophenyl)pyrrolidin-3-yl]-1-(3-trimethylsilanyl-
- 30 propyl)-3H-imidazol-1-ium chloride
- 3-[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]-1-(3-trimethylsilanyl-propyl)-3H-imidazol-1-ium chloride
- [1-(4-aminophenyl)pyrrolidin-3-yl]ethyldimethylammonium chloride

[1-(4-aminophenyl)pyrrolidin-3-yl]ethyltrimethylammonium
iodide

[1-(4-Aminophenyl)pyrrolidin-3-yl]propyltrimethylammonium
iodide,

5 [1-(4-aminophenyl)pyrrolidin-3-yl]propyltrimethylammonium
bromide

[1-(4-aminophenyl)pyrrolidin-3-yl]propyltrimethylammonium
methosulphate

10 [1-(4-aminophenyl)pyrrolidin-3-yl]butyltrimethylammonium
iodide

[1-(4-aminophenyl)pyrrolidin-3-yl]pentyltrimethylammonium
iodide

[1-(4-aminophenyl)pyrrolidin-3-yl]hexyltrimethylammonium
iodide

15 [1-(4-aminophenyl)pyrrolidin-3-yl]heptyltrimethylammonium
iodide

[1-(4-aminophenyl)pyrrolidin-3-yl]octyltrimethylammonium
iodide

20 [1-(4-aminophenyl)pyrrolidin-3-yl]decyltrimethylammonium
iodide

[1-(4-aminophenyl)pyrrolidin-3-yl]hexadecyltrimethyl-
ammonium iodide

[1-(4-aminophenyl)pyrrolidin-3-yl]hydroxyethyltrimethyl-
ammonium chloride

25 [1-(4-aminophenyl)pyrrolidin-3-yl]hydroxyethyltrimethyl-
ammonium iodide.

24. Composition according to any one of the preceding
claims, in which the cationic tertiary para-phenylene is chosen from
the group consisting of [1-(4-Aminophenyl)pyrrolidin-3-yl]trimethyl-
30 ammonium chloride

[1-(4-Aminophenyl)pyrrolidin-3-yl]dimethyltetradecyl-
ammonium bromide

N'-[1-(4-Aminophenyl)pyrrolidin-3-yl]-N,N-
dimethylguanidinium chloride

- N-[1-(4-Aminophenyl)pyrrolidin-3-yl]guanidinium chloride
 3-[1-(4-Aminophenyl)pyrrolidin-3-yl]-1-methyl-3H-imidazol-1-
 ium chloride
 [1-(4-Aminophenyl)pyrrolidin-3-yl]-(2-hydroxyethyl)-
 5 dimethylammonium chloride
 [1-(4-Aminophenyl)pyrrolidin-3-yl]dimethyl-(3-
 trimethylsilanylpropyl)ammonium chloride
 [1-(4-Aminophenyl)pyrrolidin-3-yl]-(trimethylammonium-
 hexyl)dimethylammonium dichloride
 10 1'-(4-Aminophenyl)-1-methyl-[1,3']bipyrrolidinyl-1-ium
 chloride
 3-[1-(4-Aminophenyl)pyrrolidin-3-yl]-1-(3-trimethylsilanyl-
 propyl)-3H-imidazol-1-ium chloride
 3-[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]-1-(3-
 15 trimethylsilanylpropyl)-3H-imidazol-1-ium chloride
 [1-(4-aminophenyl)pyrrolidin-3-yl]ethyl dimethylammonium
 chloride
 [1-(4-aminophenyl)pyrrolidin-3-yl]ethyl dimethylammonium
 iodide
 20 [1-(4-aminophenyl)pyrrolidin-3-yl]propyl dimethylammonium
 iodide,
 [1-(4-aminophenyl)pyrrolidin-3-yl]propyl dimethylammonium
 bromide
 [1-(4-aminophenyl)pyrrolidin-3-yl]propyl dimethylammonium
 25 methosulphate
 [1-(4-aminophenyl)pyrrolidin-3-yl]butyl dimethylammonium
 iodide
 [1-(4-aminophenyl)pyrrolidin-3-yl]pentyl dimethylammonium
 iodide
 30 [1-(4-aminophenyl)pyrrolidin-3-yl]hexyl dimethylammonium
 iodide
 [1-(4-aminophenyl)pyrrolidin-3-yl]heptyl dimethylammonium
 iodide

[1-(4-aminophenyl)pyrrolidin-3-yl]octyldimethylammonium
iodide

[1-(4-aminophenyl)pyrrolidin-3-yl]decyldimethylammonium
iodide

5 [1-(4-aminophenyl)pyrrolidin-3-yl]hexadecyldimethyl-
ammonium iodide

[1-(4-aminophenyl)pyrrolidin-3-yl]hydroxyethyl-
ammonium chloride

10 [1-(4-aminophenyl)pyrrolidin-3-yl]hydroxyethyl-
ammonium iodide.

25. Composition according to any one of the preceding
claims, in which the cationic tertiary para-phenylene is chosen from
the group consisting of

15 [1-(4-Aminophenyl)pyrrolidin-3-yl]trimethylammonium
chloride

3-[1-(4-Aminophenyl)pyrrolidin-3-yl]-1-methyl-3H-imidazol-1-
ium chloride

[1-(4-Aminophenyl)pyrrolidin-3-yl]-(2-hydroxyethyl)dimethyl-
ammonium chloride

20 1'-(4-Aminophenyl)-1-methyl-[1,3']bipyrrolidinyl-1-ium
chloride.

26. Composition according to any one of the preceding claims,
in which the cationic tertiary para-phenylene is chosen from the group
consisting of

25 [1-(4-Aminophenyl)pyrrolidin-3-yl]trimethylammonium
chloride, and [1-(4-Aminophenyl)pyrrolidin-3-yl]-(2-hydroxy-
ethyl)dimethylammonium chloride.

27. Composition according to one of Claims 1 to 26, such
that the pearlescent or opacifying agent is an uncoated titanium oxide
30 in powdered form.

28. Composition according to Claim 27, such that the
pearlescent or opacifying agent is an uncoated titanium oxide in the
form of an aqueous dispersion at 10, 20 or 30% by weight of titanium

oxide relative to the total weight of the aqueous dispersion and having a particle size equal to 15, 20 or 60 nanometres.

5 29. Composition according to one of Claims 1 to 26, such that the pearlescent or opacifying agent is a titanium oxide coated with a material chosen from polydimethylsiloxane, polymethylhydrogenosiloxane, perfluoropolymethyl isopropyl ether, silica, teflon, polyester, chitosan, N-lauryl-L-lysine.

10 30. Composition according to one of the preceding claims, in which the titanium oxide has a particle size of between 2 and 500 nanometres, preferably between 2 and 300 nanometres and more preferably still between 2 and 50 nanometres.

15 31. Composition according to one of the preceding claims, in which the cationic tertiary para-phenylenediamine(s) having a pyrrolidine ring represent from 0.001 to 10%, and preferably from 0.005 to 6% by weight relative to the total weight of the composition.

 32. Composition according to one of the preceding claims, in which the pearlescent or opacifying agent or agents represent from 0.05% to 2% by weight and preferably from 0.1% to 1% by weight relative to the total weight of the composition.

20 33. Composition according to one of the preceding claims, such that it additionally contains at least one cationic polymer.

 34. Composition according to one of the preceding claims, such that it additionally contains at least one thickening polymer.

25 35. Composition according to one of the preceding claims, such that it additionally contains at least one surfactant chosen from the group consisting of anionic surfactants, amphoteric or zwitterionic surfactants, nonionic surfactants and cationic surfactants.

30 36. Composition according to one of the preceding claims, such that it comprises at least one additional oxidation base other than cationic tertiary para-phenylenediamines having a pyrrolidine ring chosen from para-phenylenediamines, bis-phenylalkylenediamines, para-aminophenols, ortho-aminophenols, heterocyclic bases and their addition salts.

37. Composition according to Claim 36, in which the additional oxidation base(s) are present in a quantity of between 0.001 to 20% by weight and preferably between 0.005 and 6% by weight relative to the total weight of the composition.

5 38. Composition according to one of the preceding claims, such that it additionally comprises at least one coupler chosen from meta-phenylenediamines, meta-aminophenols, meta-diphenols, naphthalene couplers, heterocyclic couplers and their addition salts.

10 39. Composition according to Claim 38, such that the coupler is chosen from 1,3-dihydroxybenzene, 1,3-dihydroxy-2-methylbenzene, 4-chloro-1,3-dihydroxybenzene, 2,4-diamino-1-(β -hydroxyethyloxy)benzene, 2-amino-4-(β -hydroxyethylamino)-1-methoxybenzene, 1,3-diaminobenzene, 1,3-bis(2,4-diaminophenoxy)-propane, 3-ureidoaniline, 3-ureido-1-dimethylaminobenzene, sesamol, 15 1- β -hydroxyethylamino-3,4-methylenedioxybenzene, α -naphthol, 2-methyl-1-naphthol, 6-hydroxyindole, 4-hydroxyindole, 4-hydroxy-N-methylindole, 2-amino-3-hydroxypyridine, 6-hydroxybenzomorpholine, 3,5-diamino-2,6-dimethoxypyridine, 1-N-(β -hydroxyethyl)amino-3,4-methylenedioxybenzene, 2,6-bis(β -hydroxyethylamino)toluene and 20 their addition salts.

40. Composition according to Claim 38 or 39, such that the coupler(s) are present in a quantity of between 0.001 and 20%, preferably between 0.005 and 6% by weight relative to the total weight of the composition.

25 41. Composition according to one of the preceding claims, such that it additionally comprises at least one direct dye.

42. Composition according to one of the preceding claims, such that it additionally comprises at least one hydroxylated solvent such as ethanol, propylene glycol, glycerol, polyol monoethers.

30 43. Composition according to one of the preceding claims, such that it comprises an oxidizing agent chosen from hydrogen peroxide, urea peroxide, alkali metal bromates, persalts, peracids and oxidase enzymes, and preferably hydrogen peroxide.

44. Method for the oxidation dyeing of keratinous fibres, characterized in that a dyeing composition as defined in any one of Claims 1 to 42 is applied to the fibres in the presence of an oxidizing agent.

- 5 45. Multicompartment device in which the first compartment contains a dyeing composition for dyeing keratinous fibres, as defined in any one of Claims 1 to 42, and a second compartment contains an oxidizing agent.